FOXBOROUGH WATER AND SEWER DEPARTMENT, TOWN OF FOXBOROUGH, MASSACHUSETTS
2015 ANNUAL DRINKING WATER QUALITY REPORT
DEP PWS ID#: 4099000

This report is required under the Federal Safe Drinking Water Act.

I. PUBLIC WATER SYSTEM INFORMATION

Address: 70 Elm Street, Foxborough, MA 02035
Contact Person: Robert Worthley
Telephone #: (508) 543-1228

Internet Address:
www.foxboroughma.gov/Pages/FoxboroughMA_Water/index
Fax #: (508) 543-1227

We encourage public interest and participation in our community's decisions affecting drinking water. Regular Board meetings occur at least twice a month, at the Foxborough Water & Sewer Department office, 70 Elm Street, Foxborough, MA. The public is welcome. Please call the office to obtain specific dates and times of meetings.

Water System Improvements
Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by certified operators who oversee the routine operations of our system. As part of our ongoing commitment to you, last year we made several improvements to our system. The most significant improvement was the complete rehabilitation of the 3 MG Hill Street Reservoir. During the next year, we will continue with the installation of radio read meters, and the cleaning and reconditioning of wells. The Foxborough Water Department will continue the water saving rebate program that allows residents with older 5-to 8-gallon flush toilets to change to water-saving 1.28-gallon or lower per flush toilets. Residents who wish to participate in the program must show proof of installation and will then receive a $100 refund from the Town of Foxborough Water Department. A $75 rebate is offered for washing machines with an Energy Star water factor of 4.0 or less. Rain barrels can help conserve water for outside watering needs, and are now available at a discounted rate. Please contact the Water Department for details.

The last Sanitary Survey was completed by the MassDEP in May 2015.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

The Town of Foxborough is supplied solely from groundwater sources which are located in the Boston Harbor, Ten Mile River and Taunton River Basins. Water is pumped from 13 gravel-packed wells located in six different well fields throughout the Town of Foxborough. There is also a small section of town that is supplied by Mansfield, due to the location of water mains. In addition, there are also emergency connections with the Towns of Mansfield, Plainville, Sharon, Walpole and Wrentham.

Station 1:	Boston Harbor River Basin (01G,02G)	Station 4:	Taunton River Basin (12G)
Station 2:	Taunton River Basin (04G, 05G, 06G)	Station 5:	Boston Harbor River Basin (13G)
Station 3:	Taunton River Basin (07G, 08G, 09G, 10G)	Station 6:	Ten Mile River Basin (14G, 15G)

The Town of Foxborough in 1989 adopted a Water Resource Protection By-Law for protection of the Town's drinking water wells.

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add a disinfectant to protect you against microbial contaminants.
- We chemically treat the water to reduce lead and copper concentrations.
- We chemically treat and filter the water to reduce levels of iron and manganese.

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?
A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP. This ranking was assigned due to the presence of at least one high threat land use within the water supply protection area that could be a source of potential contamination by microbiological pathogens and chemicals. The Water Department also completed the Vulnerability Analysis and Emergency Response Plan Study. For further information, please contact the Water Department.

Where Can I See The SWAP Report?
The complete SWAP report is available at the Water Department's website at
http://www.foxboroughma.gov/Pages/FoxboroughMA_Water/SWAP.pdf. For more information, call Bob Worthley at (508) 543-1228.

Residents can help protect sources by:
Practicing good septic system maintenance; taking hazardous household chemicals to hazardous materials collection days; and by limiting pesticide and fertilizer use.

3. SUBSTANCES FOUND IN TAP WATER

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants can be naturally occurring or be the result of oil and gas production, and mining activities.

In order to ensure that tap water is safe to drink, the Department and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

"Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791)."

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791)."

"If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Foxborough Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead."

4. IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) -- The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) -- The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) -- The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) -- The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Action Level (AL) – The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

90th Percentile – Out of every 10 homes, 9 were at or below this level.

ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (ug/l)
ppt = parts per trillion, or nanograms per liter
pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units

ND = Not Detected
N/A = Not Applicable
mrem/year = millimrems per year (a measure of radiation absorbed by the body)

Secondary Maximum Contaminant Level (SMCL) – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Massachusetts Office of Research and Standards Guideline (ORSG) – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

5. WATER QUALITY TESTING RESULTS

What Does This Data Represent?

The water quality information presented in the tables is from the most recent round of testing done in accordance with these regulations. All data shown was collected during the last calendar year unless otherwise noted in the tables.

MassDEP has reduced the monitoring requirements for inorganic contaminants for several wells to less often than once per year, because the sources are not at risk of contamination. The last samples collected for inorganic samples were in 2009. Radioactive contaminants were sampled in 2012.

	Date(s) Collected	90TH Percentile	Action Level	MCLG	# of Sites Sampled	# of Sites above Action Level	Possible Source of Contamination
Lead (ppb)	2014	1	15	0	31	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2014	0.33	1.3	1.3	31	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Kings Wood Montessori was tested on 8/27/14. Lead ranged from ND to 1 ppb; copper ranged from, 0.14 to 0.2 mg/L.
Hockomock YMCA was tested on 8/27/14. Lead ranged from 2 to 5 ppb; copper ranged from 0.23 to 0.45 mg/L.

Total Coliform	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Source
Total Coliform	3.8	1	>5%	0	N	Naturally present in the environment

Regulated Contaminant	Date(s) Collected	Highest Detected Level	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Nitrate (ppm)	2015	3.98	1.03 – 3.97	10	10	NO	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate	2015	0.63	0.08 – 0.63	2	N/A	NO	Rocket propellants, fireworks, munitions, flares, blasting agents
Radioactive Contaminants							
Gross Alpha (pCi/l)	2012	1.86	-0.881-1.86	15	0	NO	Erosion of natural deposits
Radium 226 (pCi/L)	2012	0.551	-0.116 – 0.551	5	0	NO	Erosion of natural deposits
Radium 228 (pCi/L)	2012	1.26	-0.053 – 1.26	5	0	NO	Erosion of natural deposits

Disinfectants and Disinfection By-Products							
Regulated Contaminant	Date Collected	Highest Running Annual Average	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation	Possible Source of Contamination
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2015	25.51	13.6– 54.3	80	-----	NO	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2015	9.52	1.8 – 39.5	60	-----	NO	Byproduct of drinking water chlorination
Chlorine (ppm) (free)	Monthly in 2015	0.78	0.46- 0.89	4	4	NO	Water additive used to control microbes

Unregulated and Secondary Contaminants *1	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm) **2	2015	33.5 – 67.2	47.74	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Other Organic Contaminants - When detected at treatment plant as VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	2015	1.3 – 9	3.975	---	---	By-product of drinking water chlorination
Bromoform (ppb)	2015	ND – 0.5	0.125	---	---	By-product of drinking water chlorination
Chloroform (ppb)	2015	0.7 – 9.9	3.5	---	---	By-product of drinking water chlorination
Chlorodibromomethane (ppb)	2015	1.3 – 5.4	2.72	---	---	By-product of drinking water chlorination
Secondary Contaminants ***3						
Manganese (ppb)	2015	ND – 0.743	135	50	Health Advisory of 300 ppb	Erosion of natural deposits

Name	*Year*	*Range*	*Average*
1,4-dioxane (ppb)	2014	nd - 0.14	0.045
Chlorate (ppb)	2014	88 - 1000	289.21
Chloromethane (ppb)	2014	nd - 1.3	0.1083
chromium (total) (ppb)	2014	nd - 0.2	0.025
chromium-6 (ppb)	2014	nd - 0.17	0.0825
Cobalt (ppb)	2014	nd - 8.1	0.4208
Strontium (ppb)	2014	69 - 210	114.21
Vanadium (ppb)	2014	nd - 2.3	0.1208

1 "Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted". These samples above were collected in 2014 as part of Third Unregulated Contaminant Rule. The complete table of results is available at http://foxboroughma.gov/Pages/FoxboroughMA_Water/UCMR3%2006.16.16.pdf
If there are any questions, please contact Robert Worthley, at (508) 543-1228.

2. The ORSG for sodium is 20ppm. Above this level, sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the levels of sodium in their drinking water where exposures are carefully being controlled.

****3. The U.S. Environmental Protection Agency has established a lifetime Health Advisory for manganese at 300 ppb and an acute Health Advisory at 1000 ppb.***

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards? Yes.

Drinking Water Notice - Monitoring Requirements Not Met for Foxboro Water Department (DEP PWS #4099000)

In February 2015, we violated monitoring and reporting requirements of the drinking water regulations. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct this.
We are required to monitor your drinking water for specific man-made and naturally occurring contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the monitoring period listed below, we did not monitor and/or did not complete all monitoring for the contaminants listed below and therefore cannot be sure of the quality of our drinking water during that time.

The table below lists the contaminants we did not properly test for and/or report to the Department of Environmental Protection (DEP) during the required monitoring period.

Monitoring Period		Contaminate Group
2/1/2015	2/28/2015	HALOACETIC ACIDS
2/1/2015	2/28/2015	TOTAL TRIHALOMETHANES

In response to monitoring and reporting violations of the Massachusetts Drinking Water Regulations, our system has taken the following corrective actions:

1. We notified our customers of the violations in last year's Consumer Confidence Report, as well as submitted a copy of that public notice to the MassDEP and local Board of Health.
2. Sample Collection: We have already collected and analyzed samples for the contaminants listed above and have submitted copies of the sampling results to the DEP. These contaminants were collected AFTER the required monitoring period on March 9, 2015.
3. We will continue to collect samples for all contaminants according to our most recent sampling schedule.

For more information or questions regarding this notice, please contact Robert Worthley at (508) 543-1228.

7. EDUCATIONAL INFORMATON

"Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. ***Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days."***

See: http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf

To help alleviate the concerns with manganese, The Foxborough Water Department is removing iron and manganese by utilizing the Witch Pond and Oak Street Water Treatment Plants. Other sources are blended with the filtered water using the wells having the lowest manganese first, as needed, to meet seasonal demands. Treatment with a blended sodium phosphate is used for sequestration and corrosion control. Unidirectional flushing of the distribution system will continue to be conducted in the spring and fall, as weather permits.

8. ADDITIONAL INFORMATION

RADON

"Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries of radon per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your state radon program or call EPA's Radon Hotline, 800.SOS.RADON."

TREATMENT

Iron & Manganese Removal (Oxidation and Filtration) Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water is still safe to drink, it is preferable that the iron and manganese be removed.

Removal requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding chlorine to the water. This causes the iron and manganese to form tiny particles. Once this happens, the water passes through special filters consisting of material that is specifically designed to capture iron and manganese particles.

Sequestration (for iron & manganese) The sources that are not filtered are sequestered. Treatment consists of adding polyphosphates to water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

To eliminate disease-carrying organisms, it is necessary to disinfect the water. The Foxborough Water Department uses sodium hypochlorite, a form of chlorine, as its primary disinfectant. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms.

Many drinking water sources in New England have a pH of less than 7.0. Low pH water can also add harmful metals, such as lead and copper, to the water from service lines and home plumbing. For this reason, chemicals that provide a protective pipe coating and raise the pH are added. The Foxborough Water Department adds a blend of phosphates to its water. This is often referred to as an inhibitor and is what coats the inside of the pipe. Potassium hydroxide is then added to raises the water's pH to a non-corrosive level. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

Contamination from Cross Connection Cross connections that could contaminate drinking water distribution lines are a major concern. A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allowed the drinking water to come in contact with non-potable liquids, solids or gases (hazardous to humans) in the event of a backflow.

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by an equipment or system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (backpressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand, causing the water to flow backward inside the water distribution system (backsiphonage). Backflow is a problem that many water consumers are unaware of; a problem that each and every water customer has a responsibility to help prevent.

Without the proper protection, something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact, over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards. They are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bib vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with a backflow preventer.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow device. Each backflow device is tested and inspected according to the frequency specified by MassDEP based on the type of device to make sure that it is providing maximum protection. For more information, visit our Web site at:

http://foxboroughma.gov/Pages/FoxboroughMA_Water/Cross%20Connection%20Control%20Program.pdf

If you are an owner of a cross connection control device, you play a critical role in partnering with your local water system in keeping our water supply safe. By following the required annual or semiannual device testing mandated by the Cross Connection Control Regulations at 310 CMR 22.22, and keeping your device in good repair, you prevent contaminants from entering the water supply.

310 CMR 22.22(4)

(4) Owner's Responsibilities. *The owner of any cross connection protected by a double check valve assembly or reduced pressure backflow preventer shall:*

(a) Notify the public water system of all cross connections protected by a double check valve assembly or reduced pressure backflow preventer and comply with all necessary approvals and permits from the public water system and/or the Department for the maintenance of cross connections, as specified at 310 CMR 22.22;

(b) Have suitable arrangements made so that inspection of backflow prevention devices and cross connection surveys can be made during regular business hours;

(c) Maintain a spare parts kit and any special tools required for the removal and reassembly of backflow prevention devices;

(d) Provide the necessary labor for inspection and testing by the Certified Backflow Prevention Device Testers or Certified Cross Connection Surveyor;

(e) Overhaul, repair, or replace within 14 days of the initial inspection date and retest pursuant to 310 CMR 22.22(13)(e), any device which fails a test or is found defective;

(f) Submit copies of the Inspection and Maintenance Report Form as required by the public water system.

National Primary Drinking Water Regulation Compliance

The Foxborough Water and Sewer Department, 70 Elm Street, Foxborough, MA 02035 prepared this report. If you have any questions, please do not hesitate to call Robert B. Worthley, Water Superintendent at (508) 543-1228.

Office hours are Monday, Wednesday and Thursday 8:30 A.M. to 4:00 P.M.; Tuesday – 8:30 A.M. to 4:00 P.M. and 5:00 P.M. to 8:00 P.M. and Friday – 8:30 A.M. to 12:30 P.M. For water problems outside of normal hours, please call the Foxborough Police Department at (508) 543-1212.

Notice of Seasonal Water Use Restrictions:

Effective May 1, 2016

WATERING WITH SPRINKLERS WILL BE PERMITTED AS FOLLOWS:

Odd-Numbered Homes – MONDAY ONLY
Even-Numbered Homes –FRIDAY ONLY

Before 9:00 a.m. and After 5:00 p.m. ONLY

Watering with handheld hoses is allowed every day before 9:00 a.m. and after 5:00 p.m.

Water Department
Town of Foxborough
70 Elm Street
Foxborough, MA 02035

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2015 Water Quality Report

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